Wherever You Are- It's a Watershed

Student Reading

Since all land is part of a watershed, it follows that all the factors that affect the land also affect the watershed.

The boundary between two watersheds is called a divide. A watershed is drained by a network of channels that increase in size as the amount of water and sediment they must carry increases.

Streams are dynamic systems with channels that collect and convey surface runoff generated by rainfall, snowmelt or groundwater discharge. The shape and pattern of a stream is a result of the land it is cutting into and the sediment it carries. The stream is forever evolving, always in the process of change.

The climate of an area obviously plays a big part in the processes within the watershed. Land and water are linked directly by the water cycle, usually in the form of rain or snow. Runoff, the gravity-powered journey of water downstream, erodes the rocks and soil of the watershed. At least some of the water percolates into the soil as groundwater. Except for high rainfall events, most of the water running in streams is from groundwater. Humans remove both groundwater and water in streams from the watershed for their own uses. Some of that water is returned to the watershed, sometimes not as clean as it was when removed.

The shape and slope of a watershed affect the speed of runoff, erosion and the amount of water that can percolate into the soil. The steeper the slope, the greater the possibility for rapid runoff and erosion. The makeup of the soil and rocks within the watershed (some being easier to erode than others) is another factor affecting the rate of erosion and deposition.

Plant cover benefits a watershed. Grasses, forbs, shrubs and trees intercept rain and reduce the force with which it strikes the ground. The plant canopy reduces the effects of wind, and slows runoff and erosion. Plant material also falls into the stream, delivering a vital food and energy source to the creatures of the stream. Plant roots bind together the soil, and reduce erosion by stabilizing stream banks and slopes.

Human activities continue to both help and hurt the watersheds. Activities

such as agriculture, recreation, timber harvest, livestock grazing, urban and industrial development, and mining can be harmful if they are not done carefully. Management of watersheds and their river basins is part of being careful with watersheds, and includes such activities as land use planning, zoning, permitted and prohibited land uses or types of development, restrictions on water use and water developments, pollution control, and citizen involvement in repairing watersheds and management decisions. We call this stewardship, and we are all responsible for it.

Stewardship is alive and well in California! People from all walks of life are coming forward to volunteer to help restore damaged watersheds, "adopt" portions of streams and rivers, assist the California Department of Fish and Game and other agencies in monitoring fish populations, and teach young people to be responsible anglers. There is much work to be done, but with help from people, watersheds and public attitudes toward them can be improved.

Rivers, hillsides, mountain tops, bottom lands, and even groundwater are all part of one system. They are linked together directly by the water cycle and watershed. The combination of climactic conditions, soil types, topography, plant cover, and drainage systems define the character of each watershed. We all live somewhere within a unique watershed. We could say that each of us has an "ecological address", one that tells us where we live in relation to the watershed above and below us, and defined by the plants and animals that live there with us.